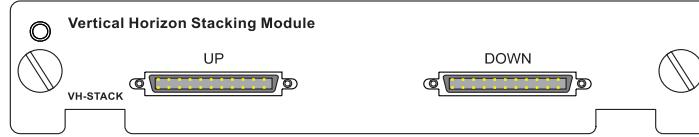


## VERTICAL HORIZON FAST ETHERNET SWITCH

### STACKING MODULE

Enterasys's VH-STACK Stacking Module can be used to stack up to four VH-2402S switch units. Running at a bandwidth of over 4 Gbps, these modules provide a common interface to the attached switches, allowing the stack to function and be managed as a single device.



### System and Port Status LEDs

LEDs are provided on the front panel of the switch. These LEDs can be used to verify if the stack is functioning properly. The following table details the indicator functions provided by the VH-2402S:

Port and System Status LEDs		
LED	Condition	Status
Power	On	Switch is receiving power.
RDP	On	Redundant power is on, and in backup or active mode.
	Off	Redundant power is off or has failed.
Mgmt	On	Agent is operational.
RJ-45 Ports		
Link	On	Port has established a valid network connection
	Yellow	Valid 10 Mbps connection.
	Green	Valid 100 Mbps connection.
	Flashing	Port has been partitioned due to an abnormal network condition, or manually disabled.
Activity <sup>1</sup>	On	Traffic is passing through the port.
FDX <sup>1</sup>	On	Port has been set to full duplex.
FC <sup>1</sup>	On	Flow control enabled.
Module Ports		
Status	On	A module is installed in this slot.
Activity	Flashing	Traffic is passing through the port

1: Use the Mode Select button to select LED display mode.

2: There is no LED for indicating stacking status.

### INSTALLING THE MODULE

**CAUTION:** The VH-STACK Stacking Module is designed for VH-2402S switches only. Do not try to install these modules in any other units.

The VH-STACK Stacking Module installs in the lower-left slot on the rear panel of the VH-2402S switch. Do not install this module in any other slot. To install the module, follow the instructions below.

### Equipment Checklist

After unpacking the Stacking Module, check the contents of the box to be sure you've received the following items:

- One VH-STACK Stacking Module
- One Stacking Cable
- This document

### Handling the Module

**CAUTION:** The VH-STACK Stacking Module can easily be damaged by electrostatic discharge.

To prevent electrostatic damage, observe the following guidelines:

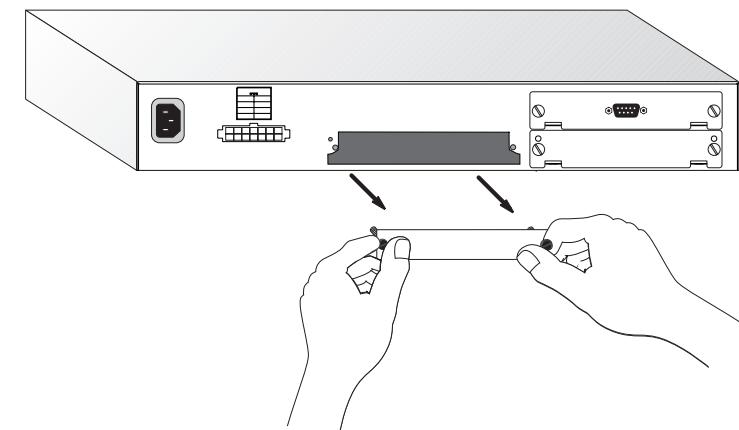
- Do not remove the module from its packaging until you are ready to install it.
- Do not touch any of the module's pins, connectors or components.
- Hold the module only by its edges or front panel.
- Wear an anti-static wristband connected to a suitable earth ground whenever handling the module.
- Store or transport this module only in appropriate anti-static packaging.

### Instructions

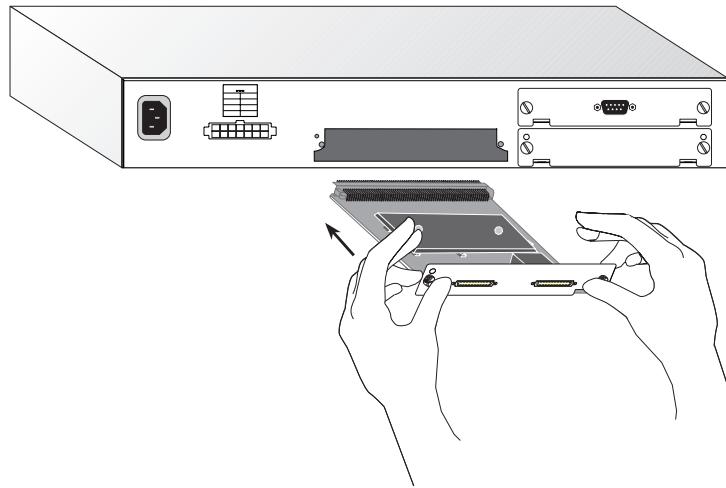
**CAUTION:** The switch must be powered off before installing or replacing any module.

1. **Power off the switch:** Disconnect the AC power cord from the switch. If a redundant power unit (RPU) is present, disconnect its DC cable connection to the switch.
2. **Remove network cables:** If you are replacing a module, remove the cable attached to the port on the module.
3. **Loosen the screws on the installed module or slot faceplate:** Using your fingers or a flathead screwdriver, turn the screws securing the module (or faceplate) in the lower-left slot in a counter-clockwise direction until they are free of the chassis. Be sure not to completely remove the screws from the module or faceplate.
4. **Remove the installed module or faceplate:** Firmly pull on the screws until the module is free of the switch. Carefully slide the module straight out of the slot.

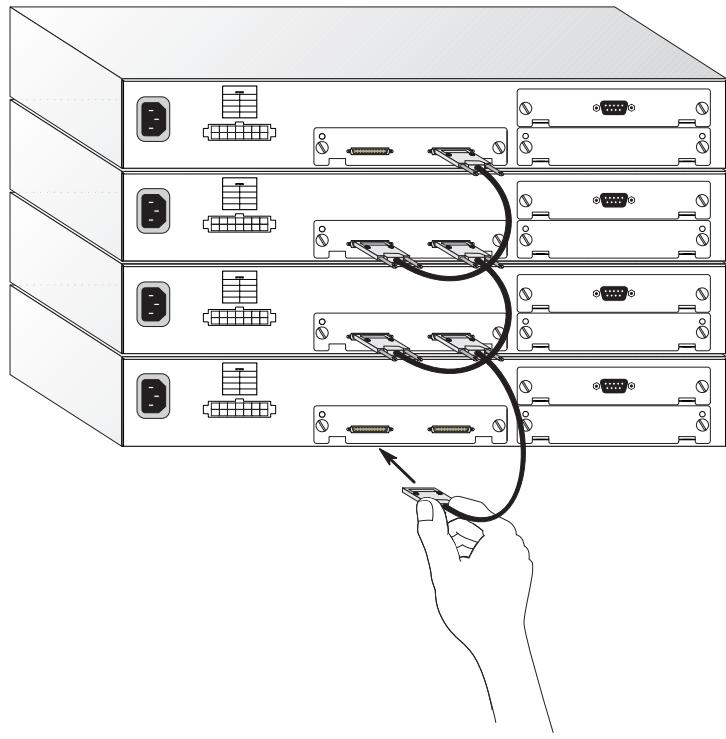
Keep the original faceplate for future use. If you should remove the module, replace the faceplate to prevent dust and debris from entering the unit and to maintain proper air flow.



5. **Insert the new module into the switch:** Holding the new module with the text on the front panel upright, carefully slide the module into the switch slot and press gently until it snaps into place. Be sure the new module's front panel is flush with the switch panel.



6. **Secure the new module:** Secure the new module in place by screwing the attached screws clockwise into the switch's chassis. Tighten them enough to secure the module, but not so tight as to prevent them from being unscrewed by hand.
7. **Connect the stack cables:** Attach one end of the stacking cable to the stack connector labeled "DOWN" on the top device, and the other end to the connector labeled "UP" on the next lower device. Repeat this step until all the devices have been connected.



8. **Power on the switch:** Reconnect the previously removed power sources to the switch. (Note that the Management Module in the bottom switch will become the master.) The front-panel LEDs on the switches should indicate their status. Refer to the table of LEDs in this guide for a description of the LED indications. If the stack is not functioning properly, see "Troubleshooting" below.

More details concerning connection options and network applications can be found in the VH-2402S Installation Guide. Information on managing the stack can be found in the Management Guide that is included with the base unit.

### TROUBLESHOOTING

If you experience any problems with the module, check the following items before contacting Enterasys's Technical Support:

- Ensure that all the switches in the stack are powered up.
- Ensure that the devices attached to the stack are powered up and operating correctly.
- Ensure that the Stacking Modules are properly seated in their slots.
- Check the connectors on both ends of the stack cable to be sure they are properly engaged. Tighten the thumb screws on the cable connectors to ensure a good connection.



Only qualified personnel should perform installation procedures.

#### NOTICE

Enterasys Networks reserves the right to make changes in specifications and other information contained in this document without prior notice. The reader should in all cases consult Enterasys Networks to determine whether any such changes have been made.

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## QUICK INSTALLATION GUIDE

## STACKING MODULE VH-STACK Vertical Horizon

#### FCC NOTICE

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment uses, generates, and can radiate radio frequency energy and if not installed in accordance with the operator's manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

**WARNING:** Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### INDUSTRY CANADA NOTICE

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

#### VCCI NOTICE

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#### EC CONFORMANCE DECLARATION

European contact: Enterasys Networks Limited  
Nexus House, Newbury Business Park  
London Road, Newbury  
Berkshire RG13 2PZ, England

This information technology product complies with ISO/IEC Guide 22 and EN45014. It conforms to the following specifications:

EN55022(1988)/CISPR-22(1985) Class A  
EN50082-1: IEC 1000-4-2, 3, 4, 6

This information technology product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carries the CE Mark accordingly.

## SPECIFICATIONS

#### Ports

2 68-pin SCSI connectors

#### Cab

SCSI Type 4

#### Size

4.82 x 3.57 x 1.08 in.  
(12.25 x 90.70.5 x 2.74 cm)

#### Power Consumption

Temperature  
2W maximum

#### T

Operating: 32° to 122° F (0° to 50° C)  
Storage: -40° to 158° F (-40° to 70° C)

#### Humidity

Operating: 5% to 95%

#### Compliances

CE Mark  
Emissions  
FCC Class A  
EN55022 (CISPR 22) Class A  
VCCI Class A  
C-Tick  
Immunity  
IEC 1000-4-2/3/4/6

## CONNECTIVITY GUIDELINES

Cable Types and Specifications			
Cable	Type	Max. Length	Connector
10Base-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft.)	RJ-45
100Base-TX	Cat. 5 100-ohm UTP	100 m (328 ft.)	RJ-45
100Base-FX	50/125 or 62.5/125 micron core multimode fiber		
	Half duplex	412 m (1,351.4 ft.)	SC or ST
	Full duplex	2 km (1.24 miles)	SC or ST
	10/125 single-mode fiber	5 km (16,404 ft)	SC or ST
1000Base-SX	50/125 or 62.5/125 micron core multimode fiber	See the following table	SC or ST
1000Base-LX	MMF or SMF	See the following table	SC or ST

1000Base-SX Fiber Specifications		
Fiber Diameter	Modal Bandwidth	Range
62.5/125 micron	160 MHz/km	7-722 ft (2-220 m)
	200 MHz/km	7-902 ft (2-275 m)
50/125 micron	400 MHz/km	7-1641 ft (2-500 m)
	500 MHz/km	7-1805 ft (2-550 m)

1000Base-LX Fiber Specifications		
Fiber Diameter	Modal Bandwidth	Range
62.5/125 MMF	500 MHz/km	2 - 550 m (7 - 1805 ft)
50/125 MMF	400 MHz/km	2 - 550 m (7 - 1805 ft)
	500 MHz/km	2 - 550 m (7 - 1805 ft)
10/125 SMF	N/A	2 m - 5 km (7 - 16,404 ft)

Maximum Fast Ethernet Network Diameter		
Repeater Type and Number	Twisted Pair 100BASE-TX	Twisted Pair/Fiber 100BASE-TX and FX
1 Class I	200 m (656 ft)	260.8 m (855.4 ft)
1 Class II	200 m (656 ft)	308.8 m (1012.6 ft)
2 Class II	205 m (672.4 ft)	216.2 m (709.1 ft)

**Note:** Network diameter is defined as the wire distance between two end stations in the same collision domain.